IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-23 (canceled).

24.   (new)   A device adapted to be worn by a user for registering and reproducing sounds for acoustic component analysis in motor vehicles, comprising:

at least two microphones (10, 12) adapted to be located in the vicinity of the two ears of a user (54) for the binaural collection of sounds and for translation into electrical signals,

a sound protection device (30, 32) adapted to being located at the two ears of the user and providing, about the two ears, a shielding of the two ears from the detected sounds,

a signal processing device (14) for processing or relaying of the produced electrical signals, and

two sound transducers (16, 18) adapted, respectively, to being provided in the vicinity of the two ears, for the binaural production of acoustic signals corresponding to the relayed or processed signals

wherein the signal processing device (14) provides a real time processing or reproduction of the produced electrical signals, and with the two sound transducers (16,

18) provides a real time binaural production of acoustic signals, and

wherein the signal processing means (14) includes filter means for suppressing frequency ranges of the registered sound, wherein the frequency ranges which are suppressible are steady or variable over time.

25. (new) The device according to Claim 24, wherein the signal processing means (14) include devices for reduction or elevating, relative to the sound level collected by the two microphones (10, 12), the sound level emitted by the sound transducer (16, 18).

26. (new) The device according to Claim 24, wherein the signal processing means (14) includes control devices for controlling the filtering devices depending upon operating parameters of a further system (22), in particular the object being examined or a motor vehicle.

27. (new) The device according to Claim 26, wherein the control device includes means for providing, preferably forms of artificial intelligence such as neural networks and/or fuzzy logic.

28. (new) The device according to Claim 24, wherein it includes data banks (24), in particular for storage of sound patterns.

29. (new) The device according to Claim 24, wherein the signal processing means (14) include synthesizers for production of sound patterns from the detected or sampled sounds.

30. (new) The device according to Claim 28, wherein the signal processing means (14) includes mixing devices for mixing in of produced sound patterns and/or stored sound patterns to the further processed or relayed signals.

31. (new) The device according to Claim 30, wherein the signal processing means (14) includes control devices for controlling the mixing device depending upon operating parameters of a further system (22), in particular an object being examined or a motor vehicle.

32. (new) The device according to Claim 31, wherein the control device includes means for presenting or reproducing, preferably forms of artificial intelligence such as neural networks and/or fuzzy logic.

33. (new) The device according to Claim 24, wherein at least one communication interface (26) is provided.

34. (new) A process for registering and reproducing sounds suitable for acoustic component analysis in motor vehicles, comprising:

binaural detection of sounds in the vicinity of the two ears of a user and conversion into electrical signals, with shielding of the two ears from the ambient sounds,

processing or relaying the produced electrical signals in real time and binaural production of acoustic signals in the vicinity of the two ears in real time corresponding to the relayed or processed signals,

wherein the processing or reproduction of the produced electrical signals occurs in real time and the binaural production of sound signals occurs in real time, and

wherein, in the real time processing, a filtering for suppression of time constant and/or variable frequency ranges is provided.

35. (new)   The process according to Claim 34, wherein the filtering occurs depending upon operating parameters of a further system (22), in particular an examined object or vehicle.

36. (new)   The process according to Claim 34, wherein the filtering occurs under employment of artificial intelligence, in particular neural network and/or fuzzy logic.

37. (new)   The process according to Claim 34, wherein a synthesizing of sound patterns out of detected sounds is provided.

38.   (new)   The process according to Claim 37, wherein the mixing of detected, synthesized and/or stored sound patterns is provided.

39.   (new)   The process according to Claim 38, wherein the mixing occurs depending upon operating parameters of a further system (22), in particular an object being examined or a motor vehicle.

40.   (new)   The process according to Claim 39, wherein the mixing occurs with employment of artificial intelligence, in particular neural network and/or fuzzy logic.

41.   (new)   The process according to Claim 34, wherein a data exchange and/or a communication with a further system occurs.

42.   (new)   Headphones adapted to be worn by a user for registering and reproducing sounds for acoustic component analysis in motor vehicles, comprising:

   two shield casings (30, 32) for human ears adapted to being worn about the two ears of the user and providing, about the two ears, a shielding of the two ears from ambient sounds,

   at least two microphones (10, 12) provided on the shield casings (30, 32), on the side opposite to the ears

of the user, for the binaural collection of sounds and for translation into electrical signals,

two sound transducers (16, 18) adapted, respectively, to being provided in the shield casing (30, 32), for the binaural production of acoustic signals corresponding to the relayed or processed signals,

said headphones adapted to being connected to a signal processing device (14) for processing or relaying of the produced electrical signals,

wherein the signal processing device (14) provides a real time processing or reproduction of the produced electrical signals, and with the two sound transducers (16, 18) provides a real time binaural production of acoustic signals, and

wherein the signal processing means (14) includes filter means for suppressing frequency ranges of the registered sound, wherein the frequency ranges which are suppressible are steady or variable over time.

43.   (new)   Headphones according to Claim 42, wherein the attenuation of interfering external sound is supported by the shield casings in the low frequency range by methods of destructive interference.

44.   (new)   Headphones according to Claim 42, wherein on the outside of each shield casing (30, 32) on the side opposite to the ear a simulation (36, 38) of a human ear is

provided, in the vicinity of which the microphone (10, 12) is provided.